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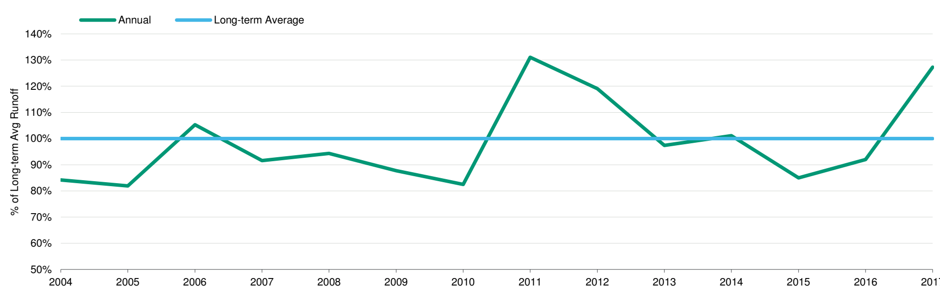
Bonneville Power Administration, OR

Credit Update Following New Sale at Energy Northwest

Summary

Bonneville Power Administration's (BPA) credit profile reflects its credit strengths comprising of US Government (Aaa stable) support elements, strong underlying hydro and transmission assets, competitive power costs, and long-term power contracts with customers through 2028. BPA's credit quality also reflects credit challenges such as hydrology and wholesale market price risk, 'regulated utility' like ratemaking process, environmental burdens, and low consolidated financial metrics. Additionally, BPA's accelerated repayment of federal appropriations debt and declining availability under the US Treasury line are factors that could suggest a weakening of the US government's explicit support features over time. BPA's ability to implement its new strategic goals in the upcoming rate case will be a key milestone for the direction of BPA's credit quality.

Exhibit 1
Columbia River Runoff at Dalles



Source: Moody's Investors Service, BPA

Credit strengths

» U.S. government support through US Treasury borrowing line and federal debt service deferral ability

» Regional importance as indirect power provider for 14 million people

» Access to 22 GW of low cost, federally owned hydro system

» Dominant electric transmission provider in the Pacific Northwest

» Highly competitive rates

» Long-term power sales contracts with creditworthy public power entities

Credit challenges

» 'Regulated utility' like ratemaking process

» Significant exposure to hydrology risk and wholesale power markets

» Weak financial metrics for the rating category

» Decreasing amount of federal debt subordination

» Declining reserves for risk and availability under US Treasury Line

» Significant fish and wildlife environmental costs

Rating outlook

The stable outlook on the revenue bonds reflects BPA's stable outlook. BPA's stable outlook considers BPA's FY 2018-19 rates and BPA's plan to maintain sufficient availability under the US Treasury line and internal liquidity through FY 2018.

Factors that could lead to an upgrade

» Ratings on the CGS bonds could be upgraded if BPA is upgraded.

» BPA's rating could improve over the long term if BPA is able to substantially mitigate hydrology and wholesale price risk and if BPA implements policies to ensure strong internal reserves for risk resulting in at least 250 days cash on hand on a sustainable basis.

Factors that could lead to a downgrade

» Ratings on the net billed bonds could be downgraded if BPA is downgraded or if the underlying net billing agreement is violated.

» BPA's ratings could be lowered if the US government's credit rating is downgraded, if we expect internal liquidity to fall below 60 days or availability under the US Treasury line declines below $1.5 billion on a sustained basis, or BPA experiences regulatory delays in receiving full recovery of costs. Other factors that could lead to a downgrade include any sign of waning federal government support or decline in the proportion of subordinated, deferrable debt owed to the US Treasury beyond actions currently planned.

Key indicators

Exhibit 2

	2012	2013	2014	2015	2016	2017
Total Sales (MWh)	94,774,440	87,547,440	89,325,720	81,599,400	84,463,920	85,672,800
Debt Outstanding ($' 000)	14,534,245	15,013,366	15,571,590	16,089,851	15,641,400	15,300,400
Debt ratio (%)	96.6%	95.7%	95.7%	94.5%	90.5%	88.2%
Total Days Cash on Hand (days)	132	117	136	152	103	92
Total Debt Service Coverage Ratio	1.11	1.05	1.19	1.17	0.57	0.82
Total Debt Service Coverage Ratio (adjusting for ENW payment deferral)	1.11	1.05	1.19	1.17	0.75	1.12
Non Federal Debt Service Coverage Ratio	2.07	1.70	3.46	4.34	3.77	3.71

Source: Moody's Investors Service, BPA

Profile

BPA was created in 1937 by an act of the US Congress and is one of four regional power marketing agencies within the US Department of Energy. BPA is primarily responsible for federally owned generation and electric transmission assets in the Pacific Northwest spanning all or parts of eight states. The Army Corps of Engineers and the Bureau of Reclamation own and operate the hydro projects. Many of the statutory authorities of BPA are vested with the Secretary of Energy, who appoints and acts through the BPA administrator. BPA's obligations are not backed by the full faith and credit of the US government and its cash payments are limited to funds available in the Bonneville Fund.

Detailed credit considerations

Revenue Generating Base

Major Power and Transmission Provider to the Pacific Northwest

BPA derives its revenues from the sale of power and transmission services from its dominant hydroelectric generation and electric transmission assets in the Pacific Northwest. BPA has roughly 75% of the Pacific Northwest's bulk electric transmission consisting of 15,000 miles of high voltage transmission lines and 260 substations and other facilities located in BPA's service area. Additionally, BPA's power supply represents roughly one third of the total regional power supply and consists of 22 GW of mostly federally owned hydro plants, the 1.1 GW Columbia Generating Station (CGS) nuclear plant, and market and contract purchases. The federal hydro projects also serve numerous purposes, including irrigation, navigation, recreation, municipal and industrial water supply, and fish and wildlife protection.

Power sales represent the largest portion at typically 75% of total revenue and the majority of these sales are made under long-term power sales contracts (Preference Contracts) maturing in 2028 with 133 municipally owned utilities, cooperatively owned utilities, and federal agencies. Sales to these customers totaled approximately $2.1 billion in FY 2017 and represent BPA's largest revenue segment at nearly 60% of total revenues (see Exhibit 3 for major customers). Power rates charged by BPA are competitive on a national basis and BPA's average tier 1 rate for the FY2018-2019 period averages $35.57/MWh.

Electric transmission sales are BPA's second largest revenue source at $964 million in revenues in FY 2017.

Exhibit 3

Top 10 Customers

Power Customer Name	Type	Rating	% of Power Sales	Transmission Customer Name	Rating	% of Transmission Sales
Snohomish County P.U.D. 1, WA Electric Ent.	Preference	Aa3	10%	Puget Sound Energy, Inc.	Baa1	12%
Cowlitz County Public Utility District 1, WA	Preference	A1	7%	PacifiCorp	A3	11%
Seattle (City of) WA Electric Enterprise	Preference	Aa2	7%	Portland General Electric Company	A3	9%
Pacific Northwest Generating Coop	Preference	NR	6%	Powerex Corp.*	NR	7%
Tacoma Power, WA	Preference	Aa3	5%	Avangrid Renewables LLC	NR	5%
Clark County Public Utility District 1, WA	Preference	A1	4%	Snohomish County P.U.D. 1, WA Electric Ent.	Aa3	5%
Eugene Water & Electric Board, OR	Preference	Aa2	3%	Seattle (City of) WA Electric Enterprise	Aa2	5%
Benton County Public Utility District 1, WA	Preference	Aa3	2%	Pacific Northwest Generating Coop	NR	3%
Flathead Electric Cooperative, Inc.	Preference	NR	2%	Hermiston Power LLC	NR	2%
Central Lincoln Peoples Utility District, OR	Preference	NR	2%	Clark County Public Utility District 1, WA	A1	2%
Total			48%	Total		61%

*Subsidiary of British Columbia Hydro & Power Authority (Aaa)
Source: Moody's Investors Service, BPA

'Regulated Utility' Like Rate Making Process Could Delay Timely Recovery

Unlike a traditional public power utility, BPA's ratemaking procedure for power and transmission rates charged to its customers involves an extensive, two-year process that shares similarities with a rate regulated utility that often create complications and delays in timely and full recovery of BPA's costs. The Northwest Power Act contains specific ratemaking procedures for BPA, mandates justification and reasons in support of such rates, and requires a hearing. The BPA Administrator ultimately decides the power and transmission rates based on the hearing record including all information submitted. Rates established by BPA are subject to approval by FERC. In a stress situation, BPA could file an expedited rate with FERC and the whole process could take several months for an interim rate approval. We see BPA's rate setting process as materially weaker than peers such as Tennessee Valley Authority (Aaa stable) that have unfettered, self-regulated rate setting. BPA's next rate case is for the FY2020-2021 period that will serve as an important milestone regarding BPA's credit quality (see section 'Financial Metrics are Low for the Rating')

Notwithstanding the 'regulated utility' like ratemaking process that BPA operates under, we recognize that BPA has raised rates in difficult situations such as the power crisis of 2000-2001 when BPA raised rates by 46%. Additionally, within a rate period, BPA is able to charge up to an additional $300 million per year starting at the beginning of the fiscal year under the Cost Recovery Adjustment Clause (CRAC) if Power Service's accumulated net revenue is below a set level that is equivalent to reserves for risk at zero balance. A separate adjustment for certain environmental costs can raise the $300 million CRAC limit. While the CRAC mechanism adds some flexibility to BPA's two-year rate periods, the annual basis of the test and low trigger point limit the benefit of the CRAC mechanism.

A credit supportive rate setting tool is BPA's use of its treasury payment probability tool whereby BPA proposes rates at levels that it can meet its US Treasury payments at a 95% confidence level based on its cash flows and reserves. BPA's approach should ensure a high probability of near-term payments to the US Treasury and an extremely high probability of near-term timely payments on non-federal debt service, which is effectively senior to the debt owed to the US Treasury.

Regional Hydrology and Wholesale Price Risk Are BPA's Biggest Volatility Drivers

BPA's financial results can be materially impacted by hydrology in the Columbia River Basin and wholesale power prices since market based power sales can represent roughly 10-15% of total revenues. Since 2001, hydrology has been very volatile with high and low around 130% and 60%, respectively, of the long-term average. Similarly, power prices have generally remained low over the last ten years and current forward prices indicate continuing low prices in the $20-30/MWh range. These factors, which are outside of BPA's control, have contributed heavily to periods of underperformance and represent BPA's biggest driver of cash flow volatility since power sales under long-term contracts and transmission sales are much more stable and predictable. Moreover, wholesale power revenues have, in the past, provided a source of cash flow for funding capital expenditures at BPA. In light of the sustained weak power markets, BPA has been more reliant on the borrowing authority with the US Treasury (currently at $2.69 billion). The volatility of wholesale revenues emphasizes the importance of maintaining significant internal liquidity especially at BPA's rating level.

Operational and Financial Performance

Environmental Costs Are Material

BPA faces conflicting uses of the Columbia River and environmental regulations, such as the Endangered Species Act (ESA), that contributes significantly to BPA's costs and weighs heavily on BPA's cash flows. Biological opinions prepared by National Oceanic and Atmospheric Administration Fisheries Service and the US Fish and Wildlife Service mandate actions to protect fish species resulting in direct costs such as hatcheries and indirect loss of revenue from hydro dam operational changes. For FY2017, BPA estimates total direct fish and wildlife costs at approximately $461 million. BPA was able to recover the non-power related environmental costs totaling $78 million from the US Treasury in FY 2017. Looking forward, BPA is likely to face increasing costs tied to a January 2018 federal court injunction for increased water spilling in FY2018.

While BPA's fish and wildlife mitigation costs are considerable, BPA's federally and non-federally owned generation are emissions free since they consist of hydro and nuclear generation. As such, BPA remains insulated against new federal regulations including those for greenhouse gases and BPA could benefit if new emissions regulations increase the market price of power.

Financial Metrics Are Low for the Rating

On a fully consolidated basis including federal debt, BPA's financial metrics are commensurate with B to A category scoring on a historic basis. Total DSCR has averaged below 1.0x over the last three years, which is commensurate with a 'B' scoring, while BPA's debt ratio is high at an average of 91%, which is commensurate with a 'Ba' scoring. While BPA generally sets rates to achieve around 1.0x DSCR, a major driver of the below 1.0x DSCR in FY2017 and FY2016 is the Regional Cooperation Debt program that deferred $717 million of payments owed to Energy Northwest for CGS, Project 1, and Project 3. After adjusting for the deferral, BPA's DSCR would average around 1.0x over the last three years. Separately, non-federal DSCR have risen to almost 3.8x since principal payments for CGS, Project 1, and Project 3 have been pushed out to the future resulting in an interest only coverage ratio for non-federal DSCR.

Looking forward, BPA's rates are generally set at around 1.0x DSCR on a forecasted basis adjusting for the ENW payment deferrals. However, actual performance can deviate especially if hydrology and market prices are different from expectations.

Moody's believes that a combination of policies that have favored customers, such as BPA's regional cooperation debt program, and challenging wholesale power market have led to an erosion of financial strength that weakens BPA's position in its rating. Recently, BPA published a new strategic plan that provides some credit positive objectives like reducing the debt ratio to a 75% to 85% range and maintaining $1.5 billion of US treasury line availability. However, the announced strategic goals could be insufficient to offset BPA's credit deterioration, particularly if the new strategic goals do not translate into robust actions to improve credit quality. Steady and material progress in reversing the trend of weakening financial strength, improving internal reserves for risk, and ensuring strong U.S. Government support elements will be critical considerations in BPA's ability to sustain its credit profile. Ultimately, the extent of any credit benefits of BPA's new strategic goals should become evident by the end of this year when BPA files its initial decision for the FY2020-2021 rate case.

LIQUIDITY

For FY 2017, BPA had reserves for risk, a measure of internal liquidity, totaling $568 million (92 days cash on hand), which is commensurate with the low end of the 'A' scoring. Below average hydrology, the need to replenish reservoirs, and lower than expected power prices were major drivers of the liquidity drop versus the $845 million (152 days cash on hand) at year-end FY 2015. For FY 2018, BPA expects its reserves for risk to decline further to $411 million which would negatively pressure the rating as this level of liquidity approaches 60 days cash on hand, which is at the lower end of the range for a "Baa" public power issuer.

As part of its FY 2018-2019 final proposed rate filing, BPA adopted a reserve policy that targets 60 to 90 day cash on hand for BPA consolidated and for each line of business . Since the power portion of BPA's business has very low internal liquidity (~20 days cash on hand at FY2017), BPA included a $20 million per year adder to its power rates to build internal liquidity for the power business. Implementation of a reserve policy is credit positive since BPA's reserves for risk have served as BPA's frontline cushion when underperformance occurs and has dropped steeply since 2008. That said, the practical benefits of the planned policy is modest since it would take more than 10 years for the power business to reach its minimum reserve levels in the optimistic scenario that BPA doesn't need to draw on such reserves. Additionally, the reserve policy has not prevent BPA from forecasting a $157 million drop in reserves for FY2018.

Supplementing BPA's internal liquidity is a $750 million borrowing sublimit under the US Treasury line that can be used to fund operating expenses. This line of credit is renewed on an ongoing basis and any draw needs to be repaid within one year.

DEBT STRUCTURE

BPA's $15.3 billion in total debt consists of $8.3 billion of non-federal debt and $7.0 billion of federal debt, which is debt owed by BPA to the federal government. BPA's non-federal debt are debt like contractual obligations such as BPA's obligation to Energy Northwest's CGS, Project 1, and Project 3 under the net billing agreements. In addition to the net billing agreements, BPA has non-federal debt through leases, power prepay, and other take-or-pay contractual obligations, Since these obligations are treated as an operating expense of BPA, they have a priority over BPA's direct debt obligation to the US Treasury and BPA can defer payments to US Treasury, if necessary. This deferral ability provides BPA a major source of financial flexibility under extreme situations though BPA has not deferred such payments since 1983 and any deferral is likely to have significant negative political ramifications. The significantly higher non-federal DSCR previously described above also highlights the substantial benefits of the federal debt's effective subordination to non-federal debt which provide support for the Aa1 rating on CGS, Project 1, and Project 3.

We see BPA's regional cooperation debt program as undermining the benefits of the federal debt's subordination, since the program results in a substantial extension of non-federal debt in exchange for the accelerated repayment of federal appropriations debt totaling $2 billion since FY2014. While we recognize the cost savings benefits for this strategy, the benefits primarily accrue to BPA's customers at the expense of the non-federal creditors. Energy Northwest's debt funding of interest and O&M expenses to accelerate repayment of federal appropriations debt further undermines the subordination and is credit negative.

DEBT-RELATED DERIVATIVES

BPA indirectly has interest rate derivative like exposure of around $1 billion mostly tied to its lease financed transmission assets. We understand there are no collateral posting requirements under any conditions for these derivatives.

PENSIONS AND OPEB

BPA employees are part of the US government's post-retirement benefit programs for all federal civil employees. The post-retirement benefits are overseen by the United States Office of Personnel Management (OPM), an independent agency that manages the civil service of the federal government. As such, BPA does not record any accumulated plan assets or liabilities related to the administration of a retirement plan.

Management and Governance

US Government Support is a Major Strength

While BPA's obligations do not benefit from the full faith and credit of the United States Government, BPA benefits from significant explicit and implicit support elements from the US Government. The key support elements consist of BPA's borrowing line ($2.69 billion available) with the US Treasury and ability to defer payments to the US Treasury. That said, BPA forecasts the US Treasury line availability shrinking over time which we see as weakening a key support element and could become a driver of future negative rating action.

A strong qualitative consideration for implicit support include BPA's role as a line agency of the US Department of Energy. As a line agency of the US DOE, the BPA Administrator reports to the US Secretary of Energy and BPA has numerous linkages with other federal agencies. For example, the US Army Corp of Engineers and the US Bureau of Reclamation own and operate the federal dams while BPA markets the power output and pays for all of the associated operating and capital costs.

Importance to the US Northwest region is another key qualitative factor. BPA is responsible for certain treaty responsibilities with Canada regarding the federally owned dams, significant regional environmental protection programs, and the coordination of river operations. Northwest US representation on key US House and Senate committees that deal with energy legislation is a credit strength.

Overall, we see these explicit and implicit US support as providing a multi-notch lift to BPA's standalone credit quality and represent key considerations for BPA's Aa1 rating. In a major stress scenario, Moody's expects any US Government support to BPA is likely to be provided through the established US Treasury credit line or deferral of payments to the US Treasury.

Methodology

Moody's evaluates BPA's issuer rating under the US Public Power Electric Utilities with Generation Ownership Exposure methodology,and the grid indicated rating is Aa2, which is lower than its Aa1 assigned rating. BPA's close linkages with the federal government as a federal agency are the supportive considerations for the Aa1 assigned rating as compared to the Aa2 indicated rating under the US Public Power with Generation Ownership methodology.

Moody's also evaluates CGS under the US Municipal Joint Action Agencies methodology, and the grid indicated rating is Aa2. The Aa1 rating assigned to CGS reflects BPA's contractual obligation to pay including debt service under the project's net billing agreement, BPA's long history of meeting its contractual obligations, and BPA's Aa1 issuer rating.

The grid is a reference tool that can be used to approximate credit profiles in the US public power industry in most cases. However, the grid is a summary that does not include every rating consideration. Please see U.S. Public Power Electric Utilities with Generation Ownership Exposure and US Municipal Joint Action Agencies for more information about the limitations inherent to grids.

Exhibit 4
BPA Methodology Scorecard

Factor	Subfactor	Score	Metric
1. Cost Recovery Framework Within Service Territory		Aa	
2. WIlingness and Ability to Recover Costs with Sound Financial Metrics		A	
3. Generation and Power Procurement Risk Exposure		Aa	
4. Competitiveness	Rate Competitiveness	Aa	
5. Financial Strength and Liquidity	a) Adjusted days liquidity on hand (3-year avg) (days)	A	115
	b) Debt ratio (3-year avg) (%)	Ba	91%
	c) Adjusted Debt Service Coverage or Fixed Obligation Charge Coverage (3-year avg) (x)	Ba	1.0x
Preliminary Grid Indicated rating from Grid factors 1-5		**A2**	
		Notch	
6. Operational Considerations		1.0	
7. Debt Structure and Reserves		1.5	
8. Revenue Stability and Diversity		0.0	
Grid Indicated Rating:		**Aa2**	

Source: Moody's Investors Service

Exhibit 5

ENW CGS Methodology Scorecard

Factor	Subfactor/Description	Score	Metric
1. Participant Credit Quality and Cost Recovery Framework	a) Participant credit quality. Cost recovery structure and governance	Aa1	
2. Asset Quality	a) Asset diversity, complexity and history	Baa	
3. Competitiveness	a) Cost competitiveness relative to market	Baa	
4. Financial Strength and Liquidity	a) Adjusted days liquidity on hand (3-year avg) (days)	Baa	37
	b) Debt ratio (3-year avg) (%)	Baa	132%
	c) Fixed obligation charge coverage ratio (3-year avg) (x)	B	0.95
Material Asset Event Risk	Does agency have event risk?	No	
Notching Factors		**Notch**	
	1 - Contractual Structure and Legal Environment	0	
	2- Participant Diversity and Concentration	0	
	3 - Construction Risk	0	
	4 - Debt Service Reserve, Debt Structure and Financial Engineering	0	
	5 - Unmitigated Exposure to Wholesale Power Markets	0	
Scorecard Indicated Rating:		**Aa2**	

Source: Moody's Investors Service

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